ROYAL BOTANIC GARDENS, KEW.

BULLETIN

OF

MISCELLANEOUS INFORMATION.

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XLIV.—JOHN MEDLEY WOOD.

1827–1915.

We regret to record the death of Dr. John Medley Wood, A.L.S., late Director of the Natal Herbarium, Durban, Natal, on August 26th last, at the ripe age of 87 years and 8 months.

Dr. Wood was an old and valued correspondent of the Royal Botanic Gardens, Kew, which he enriched with many living and dried plants, and it is to his efforts more than to those of any other single collector that so much is known of the Flora of Natal. His loss will be felt not alone by Kew, but also by many other botanical establishments throughout the world.

He was born at Mansfield, Nottinghamshire, on December 1st, 1827, in the reign of George IV., and has therefore lived under the rule of five Sovereigns. He was the son of Mr. James Riddall Wood, at that time a naval officer, and in due course became so enamoured of the sea that he joined the East Indian merchant service, in which he attained to the rank of chief officer. Although a sailor, he was in London only once in his life. In a letter to the writer received in 1900 he said: "I think it was in 1850 I reached London from the Chincha Islands in the good ship *Cordelia*, of which I was second officer; we discharged cargo in the West India Dock and left again for Liverpool. During the time I was there I only left the dock once, that was on a Sunday morning, to take a young lad to meet his father at an hotel in (I think) Newgate Street. I found the place and then returned to the ship, so I did not see much of what Cobbett called the "Great Wen," and after 50 years in quiet Natal I do not think I should feel at all at home in such a busy place." He also mentions that his ship, the *Cordelia*,' was in the Hoogly when Sir Joseph Hooker went to India with Lord Dalhousie, and he saw the party land. After nearly seven years of the sea, he went to Natal, arriving at Durban on May 4th, 1852, where he joined his father, who had also left the sea, and was then practising as a solicitor, and who was the first deputy sheriff in Natal. Upon arrival, after tramping for some distance the sand and bush that at that period formed the coast region, Wood said he was not going

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any further, and wanted to know how far it was to Durban. His companion replied that they were then at the corner of the Market Square and that a house near by was his father's office. Next morning he got up very early and walked about the sandy neighbourhood "looking for the houses" as he expressed it. While thus occupied he was seen by his mother who expressed herself as horrified that he should parade the middle of the town in his sleeping costume! Such was Durban at that period.

In the early part of his career in Natal, Dr. Wood traded with Zululand, and turned his attention to farming and the cultivation of crops suitable to the climate. From boyhood, botany had always been a favourite hobby with him, and this probably brought him in touch with Mr. McKen, the former curator of the Botanic Garden at Durban, who subsequently married his sister. Upon the death of his father, Medley Wood went to Inanda and took up stock farming. It was whilst there that in September, 1875, he first entered into correspondence with Kew and from that time until his death never ceased making valuable contributions of specimens to the Herbarium and living plants to the Gardens.

During his residence at Inanda, the Zulu War occurred, and upon hearing of the defeat at Isandhlwana, Medley Wood and others living in the vicinity removed with their wives and families to Verulam, where, as a member of the Town Guard, he prepared to help in defending the place with a small ship's carronade he had surreptitiously brought from Durban, as no one there claimed it, and for which he made the cartridges with his own hands. Fortunately Verulam was never in danger of an attack by the Zulus.

On March 1st, 1882, he was appointed Curator of the Botanic Gardens at Durban, of which he subsequently became Director, and when the Gardens were separated from the Herbarium and placed directly under the management of the Corporation, Wood remained Director of the Natal Herbarium. In the early part of his Curatorship he learned that some plants of the "Uba" cane* had lain unclaimed at the Customs House for a considerable time. All but a few were dead, but those that showed life he obtained permission to remove, and managed to coax two of them to grow into healthy plants. These were given to

* The correct name of this cane is unknown, the name "Uba" represents the only letters decipherable on the damaged label attached to this variety on its arrival in the country. Mr. Medley Wood thought that the plants were introduced by Governor Charles Mitchell on his return from a visit to India in 1884–85. The cane is now very generally cultivated in Natal, *see* Natal Agricultural Journal, Vol. viii, No. 3, 1905, p. 225. This word "Uba" may be part of the name "boubaya" applied to one of the Madagascar canes introduced to the Mauritius Botanic Garden by Dr. J. V. Thomson in 1815. This name may have found its way to India from Mauritius along with the canes sent by Captain Dick in 1827 to the Calcutta Botanic Gardens on behalf of Captain Sleeman. From cuttings of the canes, planted by Sleeman at Jubbulpur, the cultivation of Mauritius canes gradually became established in the Deccan, and had reached Bombay in 1838. But if the presence of the word "Uba" in Natal be due to the survival of the name "boubaya" in India that name must now connote a cane unlike the one to which it was originally applied. According to Thomson "boubaya" resembled an Otaheite cane.

a planter, and thus the establishment of the Uba cane in Natal is due to Dr. Wood. The Elephant cane he received from Kew in 1884 and at once distributed to the planters of Victoria and Alexandra. The organisation, building up and arranging of the fine Herbarium Durban possesses, must also mainly be placed to his credit, as before he took charge of it the collection was of a most unpretentious kind. Besides his official duties and the work of the Herbarium he found time to write the descriptions and superintend the plates of "Natal Plants," a fine work in six volumes, illustrating no less than 600 of the native plants of Natal which will remain a lasting monument of his botanical activities. At the time of his death he was at work upon another volume of this work, of which he wrote under date of August 3rd, 1915, that 72 of the plates and descriptions for volume 7 were ready. He also wrote a "Guide to the Trees and Shrubs of the Natal Garden," a "Handbook to the Flora of Natal," and a "Revised List of the Flora of Natal."

His end was very sudden, for although during the last few years of his life he was occasionally troubled with bronchitis and other passing ailments, yet on the whole he had fair health, and only the day before he died he had been busy preparing descriptions for "Natal Plants" and retired to rest apparently in good health; the next morning (August 26th) he awoke with a pain in his side, and died before help could arrive.

He was an ardent lover of cricket and football, and was president of one of the local football clubs. He was keenly interested in all their doings, and many of his letters contained allusions to these sports in some way; often also he wrote some amusing anecdote connected with his life, for he had a keen sense of humour. On one occasion he informed the writer that during the preliminaries for the transfer of the Gardens to the Corporation, some Dutchmen connected with the matter came to visit the Herbarium and were very much puzzled and astonished at what he showed them. They had expected it to be a place where "herbs for cooking and medicinal purposes were grown," and had no appreciation for the collection of dried plants, useless as it seemed to them.

In the spring of 1913 the degree of Doctor of Science was conferred on him by the University of the Cape of Good Hope—a well-merited distinction which gave great pleasure to his many botanical friends.

N. E. Brown.

XLV.—CONTRIBUTIONS TO THE FLORA OF SIAM.

Additamentum VIII.

Naravelia siamensis, *Craib* [Ranunculaceae-Clematideae]; a *N. zeylanica*, DC., foliolis fere omnino glabris, petalis longioribus recedit.

Ramuli circiter 3·5 mm. diametro, sulcati, pilis albis nitidis brevibus puberuli, cortice brunnescente obtecti. *Foliola* duo, matura late ovata vel elliptico-ovata, juniora lanceolato-ovata,

apice mucronulata, usque ad 14 cm. longa et 10 cm. lata, papyracea, pagina utraque glabra nisi costa nervisque pilis brevibus perpaucis hic illic instructa, fere e basi 3–5-nervia, nervis supra conspicuis subtus prominentibus, nervis transversis satis distantibus pagina utraque conspicuis, nervulis uti reticulatione vix gracili sub oculo armato subconspicuis, margine integro parum revoluto pauperrime ciliata; petioli ad 7·5 cm. longi, sulcati, mox glabri; petioluli circiter 1·5 cm. longi; cirrhi usque ad 12 cm. longi, apice trifidi, cito glabri. *Paniculae* axillares, pyramidali-oblongae, 15–17 cm. longae, pedunculo communi usque ad 6 cm. longo sulcato puberulo suffultae; ramuli omnes recto, puberuli, sulcati, infimi 5–7-flori, 5 cm. longi, pedunculo 2 cm. longo suffulti, mediani 3–5-flori, supremi uniflori; bracteae infimae foliaceae, foliis similes nisi multo minores vel simplices et 1·5 cm. longae, ceterae filiformes; pedicelli plerumque circiter 1·5 cm. longi, quam ramuli densius puberuli. *Sepala* cito decidua, 6–7 mm. longa, dorso pilis perpaucis adpressis instructa, margine dense tomentello-ciliata. *Petala* 1 cm. longa, superne gradatim incrassata, basi parum complanata. *Stamina* paulo ultra 3 mm. longa, filamento complanato, connectivo excurrente.

Chiengmai, Doi Sutep, in scrub jungle, 330 m., *Kerr* 1527 *b*.

Clematis siamensis, *Drummond et Craib* [Ranunculaceae-Clematideae]; a *C. sikkimensi* (Hook. f. et Th. pro var. *C. acuminatae*, DC.), cui affinis, alabastris longioribus obtuse acuminatis recedit.

Ramuli graciles, primo parce pilosi, cito glabri nisi ad nodos diutius puberuli, juventute pallide virides, mox brunnei vel fusco-brunnei, conspicue pluri-sulcati. *Folia* trifoliolata, petiolo communi 3–9·5 cm. longo juventute puberulo et supra distincte canaliculato mox inferne subglabro superne puberulo haud alte canaliculato interdumve subterete suffulta; foliola ovato-lanceolata vel oblongo-ovata, apice longe acute acuminata, basi rotundata vel cuneato-rotundata, usque ad 13·5 cm. longa et 5·5 cm. lata, terminali lateralibus paulo majore, chartacea, glabra nisi supra costa nervisque pilis paucis brevibus subrigidis instructa, vix e basi 3-nervia, nervis ad apicem excurrentibus praetereaque nervis duobus inferioribus brevioribus haud tam conspicuis additis, nervis transversis subtus prominulis, argute distantius serrata; petioluli foliolorum lateralium ad 1·5 cm. longi, terminalium ad 3 cm. longi, omnes supra magis minusve canaliculati pilisque brevibus curvatis rigidis instructi. *Paniculae* axillares, petiolo breviores vel ei subaequilongae sed saepe folia duplo superantes, 3–9 vel multi-florae; pedunculus communis 0·8–3·3 cm. longus, ut rhachis parce pubescens et parum sulcatus; bracteae angustae, 5 mm. longae, parce pubescentes, apice penicellatae sed in paniculis elongatis superiores saepe foliis similes nisi parum minores; pedicelli graciles, plerumque 2–2·2 cm. longi, paulo infra medium parvi-bibracteolati; alabastra oblonga, superne conoidea, summo apice obtusa, ad 1·8 cm. longa, summo apice pubescente excepto glabra. *Sepala* oblongo-lanceolata, apice subobtusa, 2·3 cm. longa, basi 6 mm. lata, intus inferne glabra, superne puberula, margine densius

tomentello-ciliata. *Stamina* 1·6 cm. longa, filamentis complanatis pilis longissimis argenteis ciliatis, connectivo vix excurrente. *Pistilla* stamina aequantia; carpella parva, pubescentia; stylus basi pilis longis albis ornatus, superne glaber, nisi summo apice pilis paucis perbrevibus instructus.

Chiengmai, Doi Sutep, on bushes in evergreen jungle by stream, 1300 m., *Kerr* 3146.

Clematis Wattii, *Drummond et Craib* [Ranunculaceae-Clematideae]; a *C. Rehderiana*, Craib, foliolorum textura marginibusque, pedunculo multo breviore sepalorumque textura et forma recedit.

Ramuli usque ad 6 mm. diametro, sulcati, primo densius pilosi, mox crispatim pubescentes. *Folia* pinnatim 5-foliolata, petiolo communi 4–7 cm. longo indumento ut ramulis tecto suffulta; foliola ovata vel ovato-lanceolata, apice attenuata, acuta, basi late cuneata, truncata rotundatave usque ad 8·5 cm. longa et 5 cm. lata, rigide chartacea vel fere coriaceo-chartacea, supra pilis erectis rigidiusculis parce tecta, subtus mollius pubescentia, nervis nervulisque supra impressis subtus prominentibus, plus minusve obscure triloba, crasse irregulariter crenato-serrata, petiolulis 3 cm. vel ultra longis indumento ut rhachi ramulisque suffulta. *Inflorescentia* laxa, 3–9-flora, pedunculo communi ad 8 cm. longo indumento ut ramulis tecto suffulta; pedunculi partiales circiter 4·5 cm. longi; pedicelli ad 3·5 cm. longi; bracteae infimae foliaceae, usque ad 3·5 cm. longae; alabastra ambitu oblonga, superne conoidea, circiter 2·5 cm. alta et 9 mm. diametro. *Sepala* oblongo-lanceolata, breviter apiculato-acuminata, usque ad 2·6 cm. longa et 8 mm. lata, post anthesin pulchre revoluta, extra canescentia, intus inferne glabra, superne villis paucis argenteis ornata. *Filamenta* circiter 1 cm. longa, inferne complanata, superne angustata, villosa, antheris apice truncatis vel retuso-truncatis duplo longiora. *Carpella* villis erectis argenteis longis obtecta, stylo gracili plumoso stamina subaequante. *Achaenia* castanea, laxius villosa, margine incrassata, circiter 4 mm. alta, stylo plumoso 3 cm. longo coronata.

Open grassy slopes rising to Doi Pah Khow, among tall grass, 1400 m., *Garrett* 115; Doi Chieng Dao, on low herbage, in open jungle, 1770 m., *Kerr* 2875.

Polyalthia obtusa, *Craib* [Anonaceae-Unoneae]; a *P. simiarum*, Benth. ex Hook. f. et Th., petalis longioribus, a *P. lateriflora*, King, ramulis juventute dense tomentellis, ab ambabus foliis apice rotundatis obtusisve rarissime breviter acuminatis et mucronulatis nequaquam longe acuminatis.

Arbor circiter 12-metralis (ex *Kerr*); ramuli primo dense tomentelli, cito puberuli et brunnei, mox glabri et cinereo-brunnei, cortice demum longitudinaliter reticulato haud lenticellato obtecti. *Folia* plerumque oblongo-elliptica vel fere elliptica, rarius oblongo-oblanceolata, apice rotundata obtusave, rarissime breviter acuminata et mucronata, basi cuneata vel rotundata, 10–21 cm. longa, 5·8–9·8 cm. lata, papyracea vel rigide papyracea, subtus parum pallidiora, pagina utraque primo

ad costam nervosque laterales densius puberula, mox superiore glabra, inferiore ad costam puberula et ad nervos laterales pilis paucis brevibus inconspicuis instructa, nervis lateralibus utrinsecus 14–15 intra marginem, praesertim superioribus, arcuatim junctis supra conspicuis subtus prominentibus, costa supra parum immersa subtus prominente, nervulis reticulationem gracilem supra subconspicuam formantibus; petiolus validus, circiter 5 mm. longus, puberulus. *Flores* gemini, e ramulis efoliosis orti; pedicelli graciles, 2·5–3·5 cm. longi, densius griseo-puberuli, saepius basem versus parvi-bracteolati. *Sepala* ovato-deltoidea, apice acuta vel subobtusa, 5 mm. longa, 4 mm. lata, margine revoluta, basi breviter connata. *Petala* ad 3·5 cm. longa, 6–8 mm. lata. *Stamina* vix 1·5 mm. longa. *Ovaria* paulo ultra 0·5 mm. alta, apice pilis paucis ornata, stylo distincto subglabro, stigmate puberulo. *Carpella* vix matura, 2 cm. longa, stipite ad 2·7 cm. longo suffulta; receptaculum depresso-convexum, usque ad 9 mm. altum et 1·7 cm. diametro; pedicelli lignosi, multo incrassati.

Lampang, Hue Mê Ta, mixed dry jungle, 360 m., *Kerr* 3189.

Mahonia siamensis, *Takeda* [Berberidaceae-Berberideae]; *M. flavidae*, Schneider, facie similis sed foliolo terminali basi haud cuneato, floribus majoribus et praesertim bacca globosa styloque longo differt.

Folia ad 45 cm. longa, 7–8-juga, jugo infimo stipulis valde approximato ejusque foliolis aliis 2–3-plo minoribus; petiolus basi dilatatus, stipulis subulatis ad 10 mm. longis subdeflexis praeditus; foliola lateralia inter se plus minusve approximata, lanceolata vel ovato-lanceolata, apicem versus sensim attenuata, nec cuspidato-acuminata, basi obliqua, cuneata vel subtruncata, firmissime coriacea, crassa, spinoso-denticulata, dentibus in latere inferiore 5–9, in superiore 4–8, pagina superiore nitida, nervis immersis, inferiore pallidiora, nervis venisque elevatis; foliolum terminale petiolulatum, aliis simile, basi subrotundatum. *Racemi* 6–10, fasciculati, densiflori, rhachi crassa sub anthesi 5–15 cm. longa et 2 mm. diametro demum elongata et incrassata fructifera robusta ad 30 cm. longa et 5 mm. diametro subterete; bracteae florum ovatae, acutae, 3–6 mm. longae, 2–4 mm. latae, scariosae; flores magni, pedicellis 0·5–1 cm. longis demum elongatis gracilibus suffulti. *Sepala* exteriora ovato-deltoidea, acutata, 2 mm. longa et lata, 5-nervia, mediana rotundato-ovata, obtusata, ad 4 mm. longa, 3 mm. lata, 7-nervia, interiora oblongo-elliptica, apice integra vel interdum leviter bifida, 8 mm. vel paulo ultra longa, 4·5 mm. lata, 7-nervia. *Petala* elliptica, apice biloba, 7·5 mm. longa, 4 mm. lata, basi nectariis duobus distinctis ornata, 5-nervia. *Stamina* petalis breviora, edentata, connectivo apiculato late triangulare, antheris quam filamentis brevioribus. *Ovarium* globoso-ovoideum, ovulis 4–6, stylo 2 mm. longo, stigmate capitato 1·5 mm. diametro. *Bacca* globosa, ad 5 mm. diametro, nigro-caerulea, pruinosa, stylo 2 mm. longo coronata, pedicellis strictis patentibus 0·7–1·2 cm. longis.—*Mahonia nepalensis*, Craib in Kew Bull. 1911, p. 11, *non* DC. *M. sp.*, Craib, Contrib. Fl. Siam in Aberd. Univ. Studies, No. 57, p. 10.

Chiengmai, Doi Sutep, evergreen jungle, 1500–1670 m., *Kerr* 1107, 1107A.

Distr. Burma: S. Shan States, Keng Tung, 1200 m., *Macgregor* 1236 (Herb. Calc.).

Schima brevipes, *Craib* [Ternstroemiaceae-Gordonieae]; a speciebus aliis pedicello brevi facile distinguenda.

Ramuli primo adpresse pubescentes, mox puberuli, demum glabri, cortice rubro-brunneo conspicue multi-lenticellato obtecti. *Folia* oblongo-lanceolata, ovato-lanceolata vel oblongo-obovata, apice acuta, basi cuneata vel late cuneata, usque ad 13 cm. longa et 5·1 cm. lata, mox coriacea, pagina superiore glabra, inferiore primo sericea, mox breviter pubescentia, nervis lateralibus utrinque 10–11 supra conspicuis subtus prominentibus, reticulatione pagina utraque conspicua; petioli 10–17 mm. longi. *Calyx* infructescens circiter 7 mm. diametro, dorso glaber, intus sericeus. *Fructus* globosus vel leviter depresso-globosus, ciciter 1·1 cm. altus et 1·3 cm. diametro, basi tenuiter sericeus, brunneus, pauci-lenticellatus, pedicello valido 1 cm. vix attingente suffultus. *Semina* transverse oblongo-reniformia, ala circiter 1 mm. lata inclusa 7·5 mm. longa, et 4 mm. lata.

Chiengmai, in deciduous jungle, 360 m., *Kerr* 2501.

Pentacme tomentosa, *Craib* [Dipterocarpaceae]; a speciebus aliis foliis bifacialiter pubescentibus recedit.

Arbor 8–10-metralis (ex *Kerr*); ramuli primo densius stellato-tomentosi, mox puberuli, demum glabri, cortice brunneo vel cinereo-brunneo obtecti. *Folia* oblonga vel oblongo-ovata, apice breviter vel brevissime acuminata, basi truncata, leviter cordata, usque ad 15 cm. longa et 8·7 cm. lata, papyracea, pagina utraque pilis stellatis superiore tenuioribus mollioribus inferiore ad costam nervosque laterales densius instructa, nervis lateralibus utrinque circiter 14 supra conspicuis subtus prominentibus ad marginem excurrentibus, nervis transversis satis numerosis subtus prominulis, ciliata, petiolo ut ramulis stellato-tomentoso circiter 3 cm. longo suffulta; stipulae mox deciduae, ad 1·5 cm. longae et 7 mm. latae, utrinque stellato-pubescentes. *Paniculae* e ramulis anni prioris ortae, ad 15 cm. longae, undique stellato-pubescentes; bracteae deciduae; pedicelli circiter 3 mm. longi. *Sepala* ad 1 cm. longa, ciliata, puberula. *Petala* 1·3 cm. longa, 1 cm. lata, ciliata, dorso superne parce pubescentia. *Filamenta* 2 mm. longa, antheris circiter 5 mm. longis.

Mê Maw, deciduous jungle, 300 m., *Kerr* 3184.

Decaschistia intermedia, *Craib* [Malvaceae-Hibisceae]; a *D. Harmandii*, Pierre et *D. parviflora*, Kurz, foliis supra glabris facile distinguenda.

Caules ad 40 cm. alti, pallide corticati, pilis brevibus rigidis stellatis scabridi. *Folia* inferiora oblonga, anguste oblonga rarissimeve oblongo-lanceolata, usque ad 6·8 cm. longa et 1·9 cm. lata, superiora linearia, usque ad 9·8 cm. longa, plerumque circiter 6 mm. lata, omnia apice mucronata, basi anguste cordata, satis rigida, pagina superiore omnino glabra, inferiore

dense persistenter pallide stellato-tomentosa, nervis lateralibus utrinque numerosis intra marginem anastomosantibus infra prominulis supra cum nervis transversis pulchre reticulatis prominulis, costa supra immersa subtus prominente; petioli usque ad 1·1 cm. longi, indumento ut caulis instructi; stipulae fugaces, angustae, circiter 2 mm. longae. *Flores* punicei (ex *Kerr*), axillares, solitarii, sicco 6 cm. diametro, pedicellis circiter 3 mm. longis suffulti; bracteolae 10, angustae, acutae, circiter 4 mm. longae, dorso ut calyx pedicellique densius stellato-pubescentes. *Calyx* circiter 7 mm. longus, lobis 5 lanceolatis acutis, costa dorso valde prominente, nervo intramarginali conspicuo, intra adpresse pubescentibus. *Petala* dorso ad partes in alabastro exteriores parce stellato-pubescentia, 3 cm. longa, 1·5 cm. lata. *Stamina* 1 cm. longa, parte filamentorum libera ad 3 mm. longa. *Stylus* stamina 1 cm. superans, ramis 2 mm. longis.

Wang Chao, in savannah forest, 100 m., *Kerr* 3030.

Bombax Kerrii, *Craib* [Malvaceae-Bombaceae]; a *B. cambodiense*, Pierre, petiolis haud alte canaliculatis, nervis pauciioribus, stylo glabro distinguendum.

Arbor circiter 12 m. alta (ex *Kerr*); ramuli validi, espinosi, primo tomentelli, mox glabri, cortice cinereo-brunneo vel cinereo reticulato-striato obtecti. *Folia* digitatim 5-foliolata, petiolo 4·5-10 cm. longo vix conspicue sulcato pilis brevibus stellatis deciduis tecto suffulta; foliola obovato-oblonga vel obvato-oblanceolata, apice breviter acuminata, mucronulata, basi cuneata vel acuminato-cuneata, usque ad 14·5 cm. longa et 6·3 cm. lata, coriacea, pagina superiore mox fere glabra, interdum fere scabriuscula, inferiore molliter brunneo-stellato-tomentosa, nervis lateralibus utrinque 9-12 supra conspicuis vel prominulis subtus prominentibus, reticulatione gracili sub oculo armato supra conspicua; petioluli 7-8 mm. longi, supra bisulcati. *Alabastra* obovoidea vel anguste obovoidea, apiculata, circiter 3 cm. longa et 2 cm. diametro, atra, glabra. *Calyx* floris expansi haud visus. *Petala* alba (ex *Kerr*), oblongo-oblanceolata, fere 8·5 cm. longa, 3·2 cm. lata, inferne praecipue ciliata, basi utrinque glabra, extra inferne longius sericea, intus superne albo-tomentella, inferne sericea. *Filamenta* basi in tubum 2 cm. longum connata, partibus liberis ad 5·5 cm. longis. *Ovarium* 6 mm. altum, dense brunneo-tomentosum; stylus 8·6 cm. longus, glaber.

Mûang Prao, mixed jungle, 390 m., *Kerr* 2838.

Lao name, Niu pa (ex *Kerr*).

Sterculia Kerrii, *Craib* [Sterculiaceae-Sterculieae]; a *S. colorata*, Roxb. ejusque affinioribus, calycis lobis angustis multo longioribus facile distinguenda.

Frutex 1·5-1·8 m. altus (ex *Kerr*); ramuli validi, primo stellato-tomentelli, mox glabri, cortice laevi plus minusve nitido fusco obtecti. *Folia* trilobata, ambitu oblonga vel rotundata, basi altius cordata, 10–18 cm. longa, 8–17·5 cm. lata, coriacea, pagina superiore nervis primariis et inferiore nervis primariis et transversis pilis stellatis brevibus parce instructa, nervis primariis (e basi ortis) 9–11 supra fere prominulis subtus valde promi-

nentibus nervis secondariis utrinque 3–4 subtus valde prominentibus; nervis transversis pagina superiore leviter immersis inferiore prominentibus; petioli 4–11 cm. longi, plus minusve breviter stellato-tomentelli. *Flores* ad ramulorum apices aggregati; alabastra pilis stellatis brunneis densis obtecta; bracteae fugaces, lineares, ad 7 mm. longae, stellato-tomentosae; pedicelli circiter 4 mm. longi, pilis stellatis pallidis dense tecti. *Fl.* ♂. *Calycis* albi (ex *Kerr* tubus cylindricus, 7 mm. longus et vix 5 mm. diametro, extra dense stellato-tomentosus, intus fauce lobi 5, lineares, acuti, 1·5 cm. longi, 3 mm. lati, intus glabri. *Androphorum* 2 cm. altum, validiusculum, omnino glabrum.

Doi Chieng Dao, on rocks at top of peak, 1770 m., *Kerr* 2866.

Hiptage glabrifolia, *Craib* [Malpighiaceae-Hireae]; a speciebus aliis floribus parvis, petalis cito deciduis distinguenda.

Frutex volubilis; ramuli graciles, teretes, glabri, cortice cinereo vel brunneo-cinereo lenticellato obtecti. *Folia* oblanceolata, oblongo-oblanceolata vel subelliptica, apice acuminata, obtusa vel subacuta, basi cuneata vel rotundato-cuneata, ad 10 cm. longa, 3·5 cm. lata, coriacea, glabra, subtus pallidiora, nervis lateralibus utrinsecus 5-7 intra marginem anastomosantibus supra conspicuis vel subobscuris subtus prominentibus, nervulis reticulationem subtus prominentem formantibus, margine integro cartaligineo fere ad basem glandula sessili latere utroque instructo; petioli ad 1 cm. longi, supra conspicue late canaliculati. *Inflorescentia* axillaris, racemiformis, ad 6 cm. longa, pedunculo communi petiolo breviore vel ei subaequilongo ut rhachi pedicellisque adpresse pubescente suffulta; pedunculi ultimi cum pedicellis 2·5 mm. longi; bracteae late ovatae, circa 1·5 mm. longae et latae. *Sepala* oblonga, apice rotundata, vix 2 mm. longa, pauci-ciliata, dorso glandula basi instructa. *Petala* cito decidua. *Stamen* inferius stylo longissimo fere aequilongum, ceteris sepalis subaequilongis. *Carpella* 3, infimo stylo circa 3 mm. longo evoluto, ceteris stylo perbrevi. *Fructus* ala maxima 1·9 cm. longa, 4·5 mm. lata, alae laterales 7 mm. longae, 3 mm. latae.

Mê Ping Rapids, Kêng Soi, evergreen jungle by river, 180 m., *Kerr* 2941.

Evodia parviflora, *Craib* [Rutaceae-Zanthoxyleae]; foliis 5–7-foliolatis, floribus minutis distinguenda.

Frutex, inflorescentia excepta glaber; ramuli primo pallide virides, mox brunnei vel cinereo-brunnei cinereive, teretes. *Folia* 5–7-foliolata, opposita, 5–10 cm. longa, petiolo communi simul ac rhachi supra canaliculato 1·5–5 cm. longo suffulta; foliola saepissime oblongo-elliptica vel anguste elliptica, apice acuminata, obtusa, basi cuneata vel rotundato-cuneata, 2·5-5 cm. longa, 1·2–2·5 cm. lata, chartacea vel rigide chartacea, nervis lateralibus utrinque 6–8 pagina utraque subconspicuis, nervulis subtus vix subconspicuis, margine serrata vel serrulata, petiolulo usque ad 6 mm. longo supra canaliculato suffulta. *Flores* virides (ex *Kerr*), parvi, in paniculas breves aggregati; bracteae inconspicuae, 0·75 mm. longae; pedicelli vix 1 cm. longi. *Sepala* transverse elliptico-oblonga, 1·25 mm. longa, 1·5 mm. lata,

minute ciliolata. *Petala* suboblonga, apice retusa, 1·25 mm. longa, 1 mm. lata. *Stamina* petalis paulo breviora, glabra. *Ovaria* 3, glabra, staminibus vix aequialta. *Discus* distinctus, margine crenulatus.

Doi Nang Keo, between Wieng Papao and Doi Săket, evergreen jungle, 960 m., *Kerr* 2527.

Gymnosporia obovata, *Craib* [Celastraceae-Celastreae]; a speciebus aliis foliis obovatis in ramulis brevibus fasciculatis, ovario biloculari recedit.

Frutex circiter 2 m. altus (ex *Kerr*); ramuli glabri, saepe plus minusve angulati, cortice rubro-brunneo reticulato-striato lenticellato obtecti. *Folia* obovata, apice rotundata, basi in petiolum attenuata, usque ad 5·9 cm. longa et 2·6 cm. lata; chartacea vel firme chartacea, glabra, nervis lateralibus utrinque circiter 6–7 subconspicuis, margine nisi inferne distanter serrulata; petioli plerumque 5–7 mm. longi, supra canaliculati, glabri. *Inflorescentiae* pluriflorae, foliis saepissime circiter dimidio breviores; bracteae bracteolaeque minutae; pedicelli graciles, usque ad 15 mm. longi, glabri. *Sepala* paulo ultra 1 mm. longa, sparse minute ciliolata. *Petala* 5, viridia (ex *Kerr*), oblonga, acuta, 3·5 mm. longa, 1·5 mm. lata. *Stamina* petalis breviora, glabra. *Discus* conspicuus, glaber. *Ovarium* disco vix 1 mm. altius, glabrum, stylo brevi, loculis duobus biovulatis. *Capsula* circiter 8 mm. alta, apiculata, bivalvis; semina fusco-brunnea, nitida, circiter 4 mm. longa et 2 mm. diametro, arillo circiter 1·5 mm. alto basi ornata.

Mê Ping Rapids: Hue Paka, on river bank, 150 m., *Kerr* 3047; Keng Um Lu, abundant on stony ground along edge of river, 200 m., *Kerr* 3047a.

Cissus Craibii, *Gagnepain* [Ampelidaceae]; ob folia alte lobata speciei nulli Asiaticae nisi *C. modeccoidi*, Planchon, affinis; ab hac indumento brevi ramulorum, petiolorum, foliorum, inflorescentiae ramorum et florium, calyce quadrato pubescente inter alia facile distinguenda.

Rami floriferi herbacei, sparse pilo-papillosi, nodosi, ad nodos articulati. *Folia* simplicia, basi cordata, 3–5-lobata, 6–11 cm. diametro, supra viridia, breviter pilosa, subtus pallida, reticulata, ad nervos pilosa, lobis palmatim dispositis oblongo vel lanceolato-acuminatis infimis minoribus usque ad 9 cm. longis ad medium 2–5 cm. latis; auriculae basales discretae, sinu rotundato; petiolus gracilis, 4–9 cm. longus, hirtellus, basi tumidus. *Inflorescentia* oppositifolia, umbellato-corymbosa, 2–3 cm. longa lataque, hirtella, pedunculo communi gracili 1 cm. longo, pedunculis specialibus tribus bifurcatis 5 mm. longis; pedicelli 2 mm. longi; flores virides (ex *Kerr*), in alabastro ovoidei, vix 2 mm. longi, hirtelli. *Calyx* quadratus, hirtellus, lobis vix prominentibus. *Petala* 4, cucullata, ab apice secedentia, extus pilosula, subhirtella. *Stamina* 4, filamentis stigma attingentibus, antheris suborbiculatis inter loculos haud gibbosis. *Discus* conspicuus, quadrangulus, undulatus, e basi usque ad ovarii medium coalitus. *Ovarium* in

stylum abrupte attenuatum, parte infima cylindrica, parte suprema (vel stylo) conica, stigmate terminal punctiformi; loculi biovulati, nucello haud provecto.

Foot of Mê Ping rapids, Ban Sămong, bamboo jungle, 135 m., *Kerr* 2181.

Tetrastigma quadrangulum, *Gagnep. et Craib* [Ampelidaceae]; ob ramos quadrangulares, stipulas magnas fragiles, ramulos stigmatiferos elongatos tenues distinctum; quoad flores ad *T. quadridentem*, Planchon, accedit sed ramis quadrangularibus, stigmate haud sessili recedit.

Frutex scandens; rami quadrangulares angusteve quadrialati, usque ad 5 mm. diametro, striati, glabri. *Folia* trifoliolata, petiolo communi obscure quadrangulari striato 5 cm. longo suffulta; stipulae fragiles, scariosae, amplexicaules, latae, in alas decurrentes, mox evanescentes; foliola elliptica, symmetrica, apice abrupte acuminata, calloso-mucronata, basi breviter attenuata obtusave, usque ad 12 cm. longa, 5–6 cm. lata, pagina utraque glaberrima, superiore viridia, inferiore paulo pallidiora, supra medium adpresse denticulata, dentibus apice calloso-mucronatis, costa subtus prominulente crassiuscula, nervis lateralibus utrinsecus 8–10 patulis dein arcuatis secus costam breviter decurrentibus, nervis ultimis rete densum subinconspicuum efformantibus; petioluli mediani 2·5–3 cm. longi, laterales 1 cm. longi. *Inflorescentia* axillaris, e perula plus minusve evidente assurgens, simpliciter umbellata, 2 cm. diametro; squamae basales ovatae, scariosae, fragiles; pedunculus communis 2 cm. longus, gracilis, glaber; pedicelli 6–11, filiformes, quadranguli, 7–8 mm. longi, glaberrimi, floribus ovato-truncatis 3·5 mm. longis papilloso-velutinis. *Sepala* 4, triangularia, obtusa, perbrevia, pilosula. *Petala* 4, triangularia, vix cornuta, apice evidenter inflexa, extus tenuiter villosa. *Stamina* floris feminei 4, filamentis ovario duplo minoribus, antheris abortivis. *Discus* angustissimus, subinconspicuus. *Ovarium* ovoideum, 1·5 mm. longum, apice in stylum attenuatum, glaberrimum; stylus ovario circa duplo minor, teres, stigmate coronatus; stigma 1 mm. diametro, 4-partitum, segmentis patentibus longiusculis sinuatis subulatis; ovula 4.

Chiengmai, Doi Sutep, evergreen jungle, 840 m., *Kerr* 1378.

Tetrastigma siamense, *Gagnep. et Craib* [Ampelidaceae]; ab affini *T. robusto*, Planchon, petiolis minus robustis, nervis lateralibus tenuioribus numerosioribus quam pagina haud pallidioribus, ramulis inflorescentiisque villosis, inter alia recedit.

Caulis inflatus, suberosus? mox complanatus (ex *Kerr*); ramuli primo rufo-villosi, dein glabrescentes, longitudinaliter striati. *Folia* pedatim 5–foliolata, petiolo robusto usque ad 9 cm. longo brevissime sparseque villoso suffulta; foliola ovato-lanceolata, apice obtusa, basi attenuato-obtusa, in lateralibus inaequaliter asymmetriceve attenuata, usque ad 12 cm. longa, 7–8 cm. lata, lateralibus minoribus, crassiuscula, glaberrima, utrinque pallida vel glaucescentia, laxe crenato-denticulata, dentibus prope sinum obtuse calloso-mucronatis, costa lata

crassiuscula, nervis lateralibus utrinsecus circa 10 tenuibus cum intermediis tenuissimis subinconspicuis; petioluli validi, supra planiusculi, sparse villosi. *Inflorescentia* axillaris, corymboso-umbellata, 3–4 cm. longa lataque, pedunculo communi valido circa 1·5–2 cm. longo ut pedunculis 3–5 secondariis circa 1 cm. longis breviter villoso suffulta; pedicelli 8–20, subverticillati, 3–4 mm. longi, apice incrassati, albido-villosi, floribus conicis apice truncato-corniculatis 3 mm. longis et basi 2·5 mm. diametro. *Sepala* 4, triangularia, perbrevia, pilosa. *Petala* 4, triangulari-cucullata, infra apicem dorso truncato-gibbosa, extra villoso-papillosa. *Stamina* (in floribus ♀) 4, subabortiva; filamenta ovario 2 3-plo breviora, antherae steriles, deminutae. *Discus* subinconspicuus, ad basem ovarium cingens. *Ovarium* conico-truncatum, glabrum, apice stigmaticum; stigma sessile, 4-partitum, partibus triangularibus crassiusculis patulis obliquisve; ovula 4.

Doi Din Deng, evergreen jungle, 630 m., *Kerr*, 2319.

Dalbergia succirubra, *Gagnep. et Craib* [Leguminosae-Dalbergieae]; a *D. monosperma*, Dalz., foliolis haud glabris, ovario bi-ovulato, a *D. tamarindifolia*, Roxb., foliolis 7–17 tantum, et a *D. velutina*, Benth., stipulis caducis, foliolis floribusque minoribus, ovarii stipite glaberrimo facile distinguenda.

Frutex scandens; rami juniores teretes, sinuati, dense pallide tomentosi, sicco rubescentes. *Folia* imparipinnata, 7–11 cm. longa, petiolo communi 4–8 cm. longo gracili tomentello suffulta; stipulae mox caducae; foliola 7–17, saepissime 15, elliptica, obtusissima, mucronulata, superiora gradatim crescentia, 1·5–3 cm. longa, 0·9–1·5 cm. lata, utrinque molliter pilosa, supra viridia, subtus pallida; nervi rete densum subtus subconspicuum efformantes; petioluli perbreves. *Inflorescentiae* axillares vel ramulos breves terminantes, 2–2·5 cm. longae lataeque, subcorymbosae, e basi ramosae, tomentosae; rami pluriflori, sat patuli, tomentosi; bracteae inter se 1–2 mm. distantes, subsecundae, squamiformes, persistentes, tomentosae; bracteolae persistentes, bracteis consimiles; flores densissimi, virides (ex *Kerr*), circa 6 mm. longi. *Calyx* campanulatus, extra tomentosus, dentibus 2 posticis latis obtusis, 3 anticis triangulari-acutis, mediano vix longiore. *Petala* longe unguiculata; vexillum orbiculare, obcordatum, basi magis minusve attenuatum truncatumve, 3 mm. diametro, abrupte retroversum; alae oblongae, ad unguem biauriculatae; carinae petala obtusa, semiorbicularia, basi auriculata. *Stamina* 10, monadelpha. *Ovarium* glabrum, biovulatum, stipite glaberrimo 2·5 mm. longo suffultum, stylo subulato.

Chiengmai, Doi Sutep, 990 m., *Kerr* 1682.

Eugenia ripicola, *Craib* [Myrtaceae-Myrteae]; foliis angustis oblanceolatis subcoriaceis nervis numerosis cum nervo intramarginali conspicuis distincta.

Frutex vel *arbuscula* ramulis glabris primo quadrangularibus mox teretibus cortice cinereo vel pallide brunneo-cinereo obtectis. *Folia* opposita, oblanceolata, apice acuminata, subacuta, basi

cuneata, ad 7·3 cm. longa et 1·8 cm. lata, subcoriacea, glabra, pellucido-punctata, costa supra saepius immersa subtus prominente, nervis lateralibus numerosis inter se parallelis pagina utraque conspicuis intra marginem anastomosantibus et ibi nervum intramarginalem continuum formantibus; petioli 3–5 mm. longi, glabri, supra canaliculati. *Inflorescentia* cymosa, glabra, pedunculo communi 0·7–fere 3 cm. longo suffulta; cymularum pedunculus 0·3–1·1 cm. longus; pedicelli 1 mm. haud attingentes. *Receptaculum* 3·5 mm. altum. *Sepala* decidua. *Petala* calyptratim decidua, 1·75 mm. longa, 2 mm. lata. *Stamina* longiora 5 mm. longa. *Stylus* vix 5 mm. longus; ovarium 1 mm. altum.

Mê Ping Rapids, Keng Soi, common along banks of rapids and in shallows, 180 m., *Kerr* 2944.

Sonerila Nisbetiana, *Craib* [Melastomaceae-Sonerileae]; species *S. tenerae*, Royle, facie similis sed antheris longis distinguenda.

Herba ad 5 cm. alta; caulis rubescens, erectus, simplex vel ramosus, setis divergentibus glanduloso-capitatis superne gradatim decrescentibus instructus. *Folia* plus minusve ovata vel lanceolata, mucronato-apiculata, basi cuneata vel late cuneata, usque ad 1·7 cm. longa et 9 mm. lata sed saepissime paulo breviora angustioraque, membranacea vel chartacea, pagina utraque setis satis longis sparse instructa vel glabra, e basi trinervata, nervis cum costa subtus prominulis, serrulata, petiolo brevi vel usque ad 3 mm. longo suffulta. *Inflorescentia* e floribus 1–5 constituta, caulem simplicem vel ramulos terminans; bracteae fugaces; pedicelli ad 5 mm. longi, sparse glanduloso-setosi. *Receptaculum* 4 mm. altum, 1·5 mm. diametro, setis glanduloso-capitatis parce instructum. *Sepala* late deltoidea, acute acuminata, 0·75 mm. longa, 1 mm. lata. *Petala* purpurea (ex *Kerr*), obovata, breviter vix distincte unguiculata, 3·5–4 longa, 2·75 mm. lata. *Filamenta* inferne complanata, 3 mm. longa, antheris arcuatis 4 mm. longis.

Chiengmai, Doi Sutep, deciduous jungle, 330 m., *Kerr* 1549B.

Homalium (Racoubea) Damrongianum, *Craib* [Samydaceae]; ab *H. dictyoneuro*, Warb., bracteis conspicue minoribus recedit.

Arbor 20–25 m. alta (ex *Kerr*), inflorescentia excepta glabra; ramuli ad 3 mm. diametro, primo rubro-brunnei, pauci-lenticellati, mox cinereo-brunnei. *Folia* oblonga, apice acuminata, obtusa, basi cuneata, 10–15·5 cm. longa, 2·5–4·9 cm. lata, firme chartacea, sicco viridia supra subnitida, subtus pallidiora, nervis lateralibus utrinque 7–10 supra prominulis subtus prominentibus, nervis transversis uti reticulatione gracili pagina superiore subprominulis inferiore prominulis, margine cartilagineo glandulis impressis inter se satis distantibus regulariter instructa, petiolo circiter 1 cm. longo supra canaliculato suffulta. *Racemi* axillares, foliis subaequilongi, pedunculo communi circiter 3 cm. longo fere glabro suffulti, rhachi puberula; bracteae anguste oblongae, obtusae, 2·5 mm. longae, fere 1·5 mm. latae, dorso breviter pubescentes, ciliatae; pedicelli brevissimi vel usque ad 3 mm. longi, apice bracteolis duabus bracteis similibus nisi minoribus ornati. *Calycis* segmenta oblanceolata, acuta, 6 mm.

longa, 2 mm. lata, utrinque breviter pubescentia, ciliolata. *Petala* alba (ex *Kerr*), anguste deltoidea, calycis segmentis subaequilonga, utrinque breviter pubescentia. *Filamenta* pilis paucis divaricatis instructa. *Disci* lobi petalis isomeri, densius griseo-puberuli. *Ovarium* circiter 3·5 mm. altum, 4–5-angulatum, pubescens; styli 4–5, circiter 1 mm. longi, apice glabri, stellatim dispositi.

Near Pang Pue, Pa Hin, by stream, 400 m., *Kerr* 3168.

Tarenna Collinsae, *Craib* [Rubiaceae–Gardenieae]; a *T. attenuata* (Webera attenuata, *Hook. f.*), corollae tubo breviore distinguenda.

Ramuli glabri, juventute fusci, mox cinerei, plus minusve complanati. *Folia* oblongo-obovata, rarissime subelliptica, apice acuminata, acutiuscula, basi cuneata rariusve acuminato-cuneata, usque ad 11 cm. longa et 5 cm. lata, chartacea, sicco nigra, omnino glabra, nervis lateralibus utrinque circiter 10 pagina utraque conspicuis vel subconspicuis, nervis transversis omnino vel fere omnino obscuris, petiolo usque ad 14 mm. longo supra haud altius canaliculato glabro suffulta; stipulae inter se connatae, subulato-acuminatae, dorso magis minusve carinatae, 5–6 mm. longae. *Corymbi* sessiles vel breviter pedunculati, 3 cm. longi et 4 cm. diametro, rhachi pedunculis et pedicellis puberulis; pedicelli vix ultra 1 mm. longi; bracteae et bracteolae parvae. *Receptaculum* calyci subaequilongum, circa 1 mm. altum, puberulum. *Calyx* extra puberulus, lobis 0·5 mm. longis fere 1 mm. latis acutis vel subacutis dorso superne plus minusve carinatis intus pilis perpaucis brevibus adpressis instructis. *Corollae* tubus 1 mm. longus, ore anulo denso pilorum instructus, lobi oblongi, 8 mm. longi, 3·5 mm. lati, imbricati, haud ciliati, extra glabri, intus medio inferne pilosi. *Antherae* lineares, 6·75 mm. longae, filamentis circa 1 mm. longis. *Ovarii* loculi uniovulati; stylus 1 cm. longus, circa 2 mm. e basi anulo satis lato pilorum ornatus.

Sriracha, near beach. *Mrs. D. J. Collins* 120.

Tarenna pauciflora, *Craib* [Rubiaceae-Gardenieae]; inflorescentia laxe pauciflora distinguenda.

Frutex circiter 3-metralis (ex *Kerr*), inflorescentia excepta glaber; ramuli graciles, cinereo-corticati, parum compressi. *Folia* oblanceolata, obovato-oblanceolata vel fere elliptico-obovata, apice acuminata, acuta, basi cuneata, 4–12 cm. longa, 1·5–5·5 cm. lata, chartacea, sicco nigrescentia, nervis lateralibus utrinque 6 intra marginem anastomosantibus supra conspicuis subtus parum prominentibus, nervis transversis paucis supra interdum conspicuis subtus subprominulis, petiolo 0·3–1 cm. longo supra parum canaliculato suffulta; stipulae connatae, deltoideae, acutae, vix 5 mm. longae, mox stramineae. *Inflorescentia* e cymis corymbosim dispositis constituta, laxa, circiter 3 cm. longa et 4 cm. diametro; bracteae bracteolaeque parvae; pedicelli circiter 2 mm. longi, ut pedunculi sparse bifacialiter breviter pubescentes. *Receptaculum* 0·75 mm. altum, parcissime pubescens. *Calyx* extra ut receptaculum parcissime pubescens; tubus

0·5 mm. longus; lobi paulo ultra 0·5 mm. longi, fere 1 mm lati, breviter acuminati, dorso superne subcarinati, intus ut tubus adpresse setulosi, ciliolati. *Corollae* albae (ex *Kerr*) tubus 3·25 mm. longus, intus superne densius villosus, lobi imbricati, oblongi, 5 mm. longi, 2 mm. lati, haud ciliati. *Antherae* lineares, apiculatae, 4·5 mm. longae, filamentis 0·5 mm. longis. *Ovarii* loculi 3-ovulati; stylus 8 mm. longus, paulo suprâ basem pilosus, stigmate fusiformi.

Mê Ka Mi, near Rawng Kwang, evergreen jungle, 210 m., *Kerr* 2367.

Tarenna Vanprukii, *Craib* [Rubiaceae–Gardenieae]; ab affini *T. attenuata* (Webera attenuata, *Hook. f.*), foliis majoribus, corollae tubo breviore, stylo glabro, inter alia differt.

Frutex sempervirens, inflorescentia excepta glaber, ramulis cortice rubro-brunneo mox reticulato-striato obtectis. *Folia* ovato-oblonga vel ovato-lanceolata, apice acute acuminata, basi attenuato-cuneata, 13–19 cm. longa, 4·5–6·6 cm. lata, chartacea, sicco fuscescentia, nervis lateralibus utrinque 7–11 pagina utraque prominulis, omnino glabra nisi ad nervorum axillos infra parce pilosa, petiolo 1·3–2 cm. longo supra vix canaliculato suffulta; stipulae inter se connatae, cuspidato-acuminatae, ad 8 mm. longae. *Inflorescentia* terminalis, breviter pedunculata, parcius puberula, e cymis corymbosim dispositis constituta, 6 cm. longa, 12 cm. diametro; ramulorum inferiorum pedunculus communis ad 3 cm. longus; bracteae bracteolaeque parvae; pedicelli breves. *Receptaculum* calyci subaequilongum, circa 1 mm. altum, puberulum. *Calycis* lobi 0·5 mm. longi, 0·75 mm. lati, extra puberuli, intus pilis perpaucis brevibus adpressis instructi. *Corollae* tubus 1·5 mm. longus, ore dense pilosus, lobi imbricati, 8 mm. longi, 2·5 mm. lati, haud ciliati. *Antherae* lineares, 6·5 mm. longae. *Ovarii* loculi uniovulati; stylus 1 cm. longus, glaber.

Prê, Hue Lurm, 300 m., *Phra Vanpruk* 246.

Vernonia Garrettiana, *Craib* [Compositae-Vernonieae]; a *V. peguense*, C. B. Clarke, cui affinis, foliis integris, capitulis majoribus, achaeniis pubescentibus distinguenda.

Frutex ad 2·4 cm. altus; ramuli primo tenuiter breviter adpresse pubescentes, virides, demum fere glabri, sulcati, brunneo-corticati, fistulosi. *Folia* ovato-lanceolata, elliptico-obovata vel obovata, apice breviter acute acuminata, basi cuneata, vel acuminata, decurrentia, usque ad 19·5 cm. longa et 10·5 cm. lata, chartacea vel tenuiter chartacea, pagina superiore pilis brevibus adpressis parce instructa, inferiore aureo-glandulosa et ad costam nervosque parce pubescentia, nervis lateralibus utrinsecus 7–10 intra marginem anastomosantibus pagina utraque prominulis, nervis transversis inter se satis distantibus et parallelis subtus prominulis supra subconspicuis vel subprominulis, petiolo usque ad 2 cm. longo supra canaliculato suffulta. *Capitula* in paniculas ramulos laterales terminantes foliatas circa 10–16 cm. longas et 6–10 cm. latas disposita, pedunculis vix 1 cm. longis ut rhachi densius breviter adpresse

fulvo-pubescentibus suffulta; involucri bracteae exteriores anguste triangulares, apice acutae, 3 mm. longae, 1·5 mm., latae, dorso setulis perpaucis adpressis et glandulis paucis aureis instructae, medianae, triangulares, apice acutae, 3·5 mm. longae, circa 2 mm. latae, dorso glabrae, interiores oblongo-oblanceolatae, apice subobtusae, 6–8 mm. longae, circa 2 mm. latae, dorso glabrae, omnes intus glabrae, ciliatae. *Pappus* subbiseriatus, barbellatus, 8–9 mm. longus. *Achaenia* 3·5 mm. longa, 0·75 mm. diametro, longitudinaliter sulcata, in sulcis glandulosa, pubescentia. *Receptaculum* parce pubescens.

Mê Maw, eng jungle, 330 m., *Kerr* 2341.

Maba castanea, *Craib* [Ebenaceae]; foliis ovato-oblongis vel oblongo-rotundatis coriaceis sicco castaneis cognoscenda.

Arbor circiter 6-metralis (ex *Kerr*); ramuli juventute dense griseo-puberuli, cito puberuli, cortice fusco-brunneo vel brunneo obtecti. *Folia* ovato-oblonga vel oblongo-rotundata, apice obtusa vel rotundata, saepe fere truncata, basi rotundata vel truncata, saepissime leviter cordata (5–) 7·5–13 cm. longa, (3·2–) 5–8 cm. lata, coriacea, sicco castanea, infra pallidiora, pagina inferiore primo breviter arctius adpresse pubescentia, matura costa puberula, pilis brevibus inconspicuis adpressis hic illic sparsissime instructa, pagina superiore glabra, subnitida, nervis lateralibus utrinque 8–10 supra conspicuis saepe subprominulis infra prominulis, nervulis paucis pagina utraque subconspicuis, margine primo ciliata, mox glabra cartilagineaque, petiolo 0·8–1·2 cm. longo supra apicem versus canaliculato primo densius puberulo suffulta. *Inflorescentia* mascula axillaris, sessilis, spiciformis, basi dense imbricatim bracteata, rhachi bracteisque extra sericeis; bracteae florales naviculiformes, circiter 4 mm. longae, deciduae. *Calyx* ellipsoideo-tubulosus, breviter 3-lobatus, 6–7 mm. longus, 4 mm. diametro, extra breviter parcius sericeus. *Corolla* alba (ex *Kerr*); tubus 8 mm. longus, extra basi glaber, superne breviter sericeus; lobi 3, oblongo-elliptici, apice rotundati, 5·5 mm. longi, 3·75 mm. lati, dorso sericei. *Stamina* 12, antheris acutis circiter 2 mm. longis. *Fructus* ambitu oblongus vel elliptico-rotundatus, usque ad 2·2 cm. longus et 2 cm. diametro, ater, basi apiceque parce breviter adpresse pubescentibus exceptis glaber, calyce truncato patelliformi circiter 9 mm. diametro persistente.

Ban Na, 150 m., *Kerr* 2956 (♂); Sriracha, 24 m., *Mrs. D. J. Collins* 172.

Diospyros cratericalyx, *Craib* [Ebenaceae]; a *D. undulata*, Wall., calyce fructescente crateriformi haud patelliformi, seminibus minoribus recedit.

Arbor, ramulis primo breviter adpresse ferrugineo-pubescentibus mox glabris cortice atro-brunneo pauci-lenticellato obtectis. *Folia* saepissime oblonga vel oblongo-elliptica, utrinque acuminata, ad 13 cm. longa, 5·5 cm. lata, chartacea vel subcoriacea, pagina superiore glabra, inferiore juventute adpresse strigillosa, demum plus minusve glabrescentia, nervis lateralibus utrinsecus plerumque 8–9 intra marginem anastomosantibus supra conspicuis subtus prominentibus, costa supra im-

pressa, reticulatione laxa supra conspicua, grandulis duabus prope basem instructa, petiolo 1–1·5 cm. longo supra canaliculato suffulta. *Flores* deficientes. *Fructus* subsessilis; calyx crateriformis, extra subconspicue vel interdum obscurius 5-costatus, extra basi breviter adpresse fulvo-pubescens, apicem versus glabrescens, intus dense adpresse fulvo-pubescens; tubus 8–9 mm. altus, ore 1·5 cm. diametro; lobi late triangulares, acuminati, obtusi, 5–7 mm. longi, 1–1·2 cm. lati; fructus globosus, vel ellipsoideus, breviter apiculatus, circa 2 cm. altus, adpresse ferrugineo-pubescens; semina castenea, 1·3 cm. longa.

Sriracha, Nawng Kaw, evergreen jungle, 30 m., *Kerr* 2059, *Mrs. D. J. Collins* 345.

Aganosma siamensis, *Craib* [Apocynaceae-Echitideae]; ab *A. gracili*, Hook. f., sepalis corrollaque minoribus recedit.

Frutex volubilis; ramuli primo breviter adpresse albo-strigosi, mox glabri, cortice atro-bruuneo sparse lenticellato reticulato-striato obtecti. *Folia* plerumque oblonga, apice acute acuminata, basi cuneata vel rotundata, usque ad 15 cm. longa et 6·7 cm. lata, chartaceo-membranacea, sicco supra fusco-bruunea, subtus pallidiora, pagina utraque glabra, costa supra saltem basem versus impressa, nervis lateralibus utrinsecus 6–9 intra marginem anastomosantibus supra subprominulis subtus prominulis, nervulis subobscuris, margine pauperrime ciliata; petioli plerumque circa 1 cm. longi, pilis paucis albis adpressis instructi, supra canaliculati. *Inflorescentia* generis, pedunculo communi brevi vel omnino deficiente cum rhachi pedunculisque partialibus adpresse strigilloso; pedicelli 5–7 mm. longi, tomentelli; bracteae cito deciduae, 5 mm. longae. *Sepala* inter se inaequalia, anguste lanceolata ovatave, acuminata, acuta, usque ad 2·8 cm. longa et 6 mm. lata, utrinque griseo-tomentella. *Corollae* albae (ex *Kerr*) tubus paulo ultra 1 cm. longus, extra griseo-tomentellus, intus superne dense pilosus, lobi 3·5 cm. longi, 1·3 cm. lati. *Stamina* 5·5 mm. longa, fere ad tubi basem affixa. *Fructus* carpella 14 cm. longa, circa 7 mm. diametro, adpresse strigillosa, glabrescentia.

Chiengmai, Doi Sutep, evergreen jungle, 660 m., *Kerr* 1797.

XLVI.—OROPHEA POLYCARPA AND ARTABOTRYS BURMANICUS.

W. G. Craib.

Orophea polycarpa, *A.DC.*—The somewhat inadequate material collected by Wallich and described by De Candolle under the above name has led to confusion resulting in the name being applied to a totally different Andaman plant. Hooker and Thomson in their Flora Indica state that they had no material for dissection and that they derived their description of the flower from the original. Kurz in his Andaman Report (infra cit.) gives the first record of the Andaman plant. At first he regarded it as distinct from De

Candolle's species and named it *Melodorum monospermum* without, however, providing any description. Afterwards he published it as *Orophea polycarpa*, quoting as a synonym his own nomen nudum. Coming to the Flora of British India we find the Andaman plant included in the description of De Candolle's species. Subsequent authors have acquiesced in Flora of British India treatment until, in King's monograph of the Indian *Anonaceae*, we find the description and figure of *O. polycarpa* apply wholly to the Andaman plant.

The receipt of copious material from Siam and Burma led the writer to examine one of the few flowers in the Wallichian herbarium, with the result that he finds the Burmo-Siamese plant agrees exactly with Wallich's and also with Pierre's *O. anceps*.

It thus becomes necessary to find a new name for the Andaman plant, and the writer proposes to use Kurz's specific name for it, although this name cannot be said to be a very appropriate one in the genus.

Descriptions of the two species do not appear necessary since for *O. polycarpa* we have De Candolle's original description and also Pierre's figure and description of *O. anceps* and for *Melodorum monospermum* we have King's description and figure of *O. polycarpa*.

The synonymy and distribution of the two species is as follows:—

O. polycarpa, *A.DC.* in Mem. Soc. Genev. v. p. 39; Hook. f. et Th., Fl. Ind., i. p. iii; Griffith, Ic. Pl. Ind. Or. iv. t. 654; Hook f. et Th. in Hook. f. Fl. Brit. Ind., i. p. 91 (*pl. Andaman. excl.*); Kurz in Journ. As. Soc. Beng., xliii. 2 p. 58 et For. Fl. Brit. Burma, i. p. 49 (*pl. Andaman. excl.*); King in Journ. As. Soc. Beng., lxi. 2 p. 85 et in Ann. Roy. Bot. Gard. Calc., iv. p. 109 (*pl. Andaman., floris descr. et tab. excl.*); Brandis, Indian Trees, p. 18, *quoad pl. burmanicam. O. anceps*, Pierre, Fl. For. Cochin t. 46; Finet et Gagnep. in Bull. Soc. Bot. Fr., Mem. 4 p. 156 et in Lecomte Fl. Gen. Indo-Chine, i. p. 116. *Bocagea polycarpa*, Steud.

Burma: banks of Salween, anno 1827, *Wall. Cat.* 6431; Ava journey, *Griffith*, 399; Amherst, Thaungyin valley, *Lace* 4715.

Siam: near Pang Pue, Pa Hin, evergreen jungle, 400 m., *Kerr* 3172; Prê, 180 m., *Phra Vanpruk* 324; Mê Thow, 600 m., evergreen jungle, *Khun Winit* 86.

Cambodia: Samrong-tong, *Pierre* 738, 738 c.

Orophea monosperma, *Craib*, comb. nov. *O. polycarpa*, Hook. f. et Th. in Hook. f. Fl. Brit. Ind., i. p. 91 (*quoad pl. Andaman.*); Kurz in Journ. As. Soc. Beng., xliii. 2, p. 58 et For. Fl. Brit. Burma, i. p. 49 (*quoad pl. Andaman.*); King in Journ. As. Soc. Beng., lxi. 2 p. 85 et in Ann. Roy. Bot. Gard. Calc., iv. p. 109, t. 151 A (*pl. burman. citatis et syn. Steud. tantum excl.*), *non* A.DC. *Melodorum monospermum*, Kurz in And. Rep., App. B., p. 1 — nomen tantum.

South Andaman, *Kurz, King, King's Collector.* Middle Andaman, *Parkinson* 100.

Artabotrys burmanicus, *A.DC.*—The history attaching to this species is practically a repetition of that of *Orophea polycarpa*, A.DC. A misidentification has led to the name being at the present-day attached to a plant totally different from that originally described by De Candolle.

The synonymy and distribution of the two species is as follows:—

Artabotrys uniflorus, *Craib*, comb. nov. *A. burmanicus*, Hook. f. et Th., Fl. Ind., i. p. 129; Kurz, For. Fl. Brit. Burma, i. p. 32; Hook. f. et Th. in Hook. f. Fl. Brit. Ind., i. p. 55; King in Ann. Roy. Bot. Gard. Calc., iv. p. 47 t. 62 (*omnes quoad plantas petala triquetra habentes*) *non* A.DC. *Ropalopetalum uniflorum*, Griff. Not., iv. p. 717.

Tenasserim, *Griffith* 890 (K.D. 430), *Proudlock*.

A barren specimen from Pegu—*Kurz* 1863—may also belong here.

A. burmanicus, *A.DC.*, Mem., p. 36; auct. supra citati quoad plantam Wallichianam tantum.

Wall. Cat. 6418. Mandalay, Zibingyi, 560 m., *Lace* 5185.

Besides the Burmese plants King, l.c. quotes also a plant from Manipur. Unfortunately this plant is in fruit only, but it certainly belongs to neither of the above species. Finet and Gagnepain in Lecomte's Fl. Gen. Indo-Chine record and describe a plant as *A. burmanicus*, but whatever their plant may be their description makes *A. burmanicus* an impossible identification.

XLVII.—MISCELLANEOUS NOTES.

Botanical Magazine for November.—The plants figured are *Rhododendron carneum*, Hutchinson (t. 8634); *Sievekingia Shepheardii*, Rolfe (t. 8635); *Anemone obtusifolia*, Don, forma *patula*, Craib (t. 8636) and *Potentilla davurica*, Nestl. var. *Veitchii*, Jesson (t. 8637).

Rhododendron carneum is an attractive pink-flowered species found in the Northern Shan States by Major C. W. Brown at an altitude of 7500 ft. From the seed sent by him to Col. F. B. Longe, Holly Lodge, Norwich, the subject of the plate has been grown. In Burma it grows to a height of about 3 ft. on open grassy hillsides. This species is most nearly allied to *R. Veitchianum*, Hook., but in the latter the calyx-lobes are ciliate and usually much larger, and the corolla is white with suberect lobes.

Reichenbach founded the genus *Sievekingia* in 1871 on a species from Costa Rica. Now six species of this interesting genus are known inhabiting Costa Rica, British Guiana, Ecuador, Colombia and Peru. The species figured was collected in Colombia in the Rio Condoto Choco by Dr. S. Shepheard, and is now in the Kew Collection. *S. Shepheardii* differs from other species in having two leaves to the pseudo-bulbs and in its erect, many-flowered scapes.

Mount Victoria in Western Burma is the home of *Anemone obtusifolia* and the form figured was collected by Lady Wheeler Cuffe at a high altitude on that mountain in 1913, and has been grown in the Royal Botanic Gardens, Glasnevin. The species is widely distributed from Kashmir to Western China, with this southern extension to Mount Victoria. The plant is very variable in size, colour, and hairiness, the form figured has beautiful purplish-blue flowers.

The variety of *Potentilla davurica* here figured is one of the most attractive of the shrubby Potentillas. A native of upland thickets in Szechuan and W. Hupeh, at some 6000 ft. above sea level, it was introduced to cultivation by Messrs. J. Veitch & Sons through seed collected by Mr. E. H. Wilson in 1900. The plant figured is intermediate between *P. fruticosa*, Linn., and *P. davurica*, Nestl., but is nearer to the latter species, from which it differs in its more lax habit and more or less hairy leaflets.

Botanical Magazine for December.—The plants figured are *Fatsia japonica*, Dcne. et Planch. (t. 8638); *Euonymus oxyphyllus* Miq. (t. 8639); *Iris bracteata*, S. Watson (t. 8640), and *Prunus Maximowiczii*, Rupr. (t. 8641).

Fatsia japonica and its variegated forms have long been familiar garden plants, being commonly used in conservatory and room decoration and in subtropical bedding. In favoured localities the species is hardy and will attain a height of 13 ft., and even at Kew plants in the Bamboo Garden have stood since 1891, suffering from cold only in the severe frosts of February, 1895. The genus as now understood includes only *F. japonica*, as *F. papyrifera*, Benth. & Hook. f., figured in the Botanical Magazine at t. 4697 under the name of *Aralia papyrifera*, Hook., has been transferred to *Tetrapanax*, and *F. horrida*, Benth. & Hook. f., to *Echinopanax*, and is figured at t. 8572 as *E. horridus*, Dcne. and Planch. The name *Fatsia*, given to the genus by Decaisne and Planchon, was supposed to be from Fatsi, the native name of the plant, but this, according to Franchet and Savatier, is more correctly written Iats'de.

Like the *Fatsia*, *Euonymus oxyphyllus* is a native of Japan, the latter extending into Corea. Though closely resembling the European *E. latifolius*, Scop., especially in its flowers, it may be easily distinguished by its fruits, which are not lobed; these are very attractive, being carmine, while the seeds, which adhere to the placentas some time after the dehiscence of the fruits, are enveloped in a scarlet arillus. The specimen for the figure was provided by a plant received from the Arnold Arboretum in 1895. It has proved itself to be quite hardy and thrives in a loamy soil.

Iris bracteata comes from Oregon, where it was discovered in 1884 by Mr. T. Howell. It has been cultivated at Kew for many years and succeeds well, flowering in May or early June, about a fortnight later than in the wild state. The specimen figured has yellow flowers with brownish-purple veins on the outer segments. These veins, however, are not always present in flowers on wild specimens, and Mr. W. R. Dykes has called

attention to various colour varieties or hybrids in which the yellow of the flowers is replaced by red, but having the characteristic veining.

Prunus Maximowiczii was originally found in Eastern Manchuria by Ruprecht in 1857; since then it has been met with in Corea, Sachalin and Japan. Its first appearance in this country dates from 1895, when Prof. Sargent sent it to Kew from the Arnold Arboretum. The species is included in the *Mahaleb* section of the cherries, and is remarkable among the species in cultivation in the conspicuous foliaceous bracts borne by the inflorescence. Its flowers are at first white, changing to pinkish as they fade, and are rather small, while the globose fruits pass from red to black and are a quarter of an inch across.

Volume 141 of the work, which is completed with this issue, is dedicated to S. T. Heard, Esq., "in whose garden at Rossdohan, near Kenmare, so many plants whose portraits embellish the Botanical Magazine find a congenial home."

Agriculture in Colombia.—Mr. M. T. Dawe, who was recently appointed Agricultural Adviser to the Colombian Government, has recorded some impressions of the present condition and possibilities of agriculture in Colombia received during a journey from Santa Marta to Bogotá.*

In Santa Marta there are two agricultural zones, a lower and an upper, characterised respectively by the cultivation of the banana and coffee. The export of bananas for the year 1915 had been estimated at 8,000,000 bunches, but it is now calculated that 2,500,000 bunches less will be exported owng to the extensive damage caused by a tornado. Although there is already a bi-weekly service of steamers engaged in carrying bananas to the United States and Europe, there seems to be room for considerable expansion of the trade. The rainfall in the lower zone is so irregular and uncertain that, apart from such xerophytes as *Agave*, cultivation on a commercial scale is practically impossible without irrigation. This zone would be very suitable for the cultivation of *Agave*, in which, owing to its favourable geographical situation and facilities for transport, Santa Marta might become a formidable competitor of Tropical East Africa. Although the physical conditions are suitable for the cultivation of cotton, it is improbable that this could be profitably grown on a commercial scale, owing to the high rate of wages.

Pará and Guinea grass are used for pastures in the Santa Marta region. Mr. Dawe recommends the introduction of other pasture and fodder-plants, and especially of the Velvet bean.

In the upper agricultural zone of Santa Marta coffee is the only plant cultivated on a large scale, the largest plantation being the "Cincinnati," which has about 350,000 trees. Coffee seems to do best at an altitude of about 4500 ft. in the Sierra Nevada. The trees are sown at intervals of about 8 ft., and are neither topped nor pruned. The shade-tree employed is the guamo (*Inga dulcis*). The average annual yield of dry coffee per tree

* *La Patria*, Bogatá, October 2nd, 1915.

is said to be 1 lb., and in exceptionally favourable years as much as 1½ lbs. The trees seem to suffer from over-shading, and better results might be obtained by the use of species of *Albizzia* or *Erythrina* as shade-trees, coupled with judicious topping and pruning. A disease affecting both the leaves and fruits of the coffee, on which it appears in the form of round blotches, is probably caused by the fungus *Omphalia flavida*, Cooke. It is most abundant in deep ravines and shady places.

From Santa Marta Mr. Dawe travelled by rail to Cienaga, and thence by steam-launch to Barranquilla, passing extensive stretches of mangrove swamps. Small quantities of mangrove bark are exported to New York *via* Puerto Rico, but there is no doubt that many thousand tons could be exported annually if the Magdalena delta were suitably exploited. The mangrove bark destined for export seen in Barranquilla was divided into large pieces, whereas that exported from Madagascar and East Africa is cut into small pieces, 5 in. long and 2 in. broad.

The most noticeable thing in the journey up the River Magdalena, from Barranquilla to Girardot, was the great extent of fertile alluvial land, capable of producing enormous crops of sugar, cocoa, rubber and other tropical products; but the country is very sparsely inhabited, and the inhabitants obtain their living by cutting wood for the passing steamers, and grow no more food than is required for their own needs.

The first step in the development of this region should be the improvement of the navigable channel of the Magdalena. The practice of cutting the trees on the river-banks should be prohibited, as this leads to the washing away of the banks.

The condition of agriculture in the Lower Magdalena region might be greatly improved by the establishment of a model plantation conducted on commercial lines, where sugar, cocoa, rubber, cotton, maize, rice, kidney-beans, etc., could be grown, and the best methods of cultivation demonstrated.

Immense areas of the Lower Magdalena basin are covered with forests, which might under suitable administration become one of the principal sources of revenue in Colombia, judging from the large selection of useful woods seen by Mr. Dawe at Barranquilla. A duty should be imposed on each tree of certain kinds that is felled, and the work of re-afforestation should be taken in hand in areas where the forests have been destroyed. This is especially necessary in the Upper Magdalena region, where there is a scarcity of wood for the steamers in certain places.

The estate of Santa Sofía, at Giradot, was examined with a view to its suitability as the site of an agricultural experiment-station and college. The means of communication are very good, as Giradot is the junction of the railways to Bogotá and the Pacific Coast, and the upper limit of steam navigation on the Magdalena. The soil of the district is of medium quality and suitable for the cultivation of *Agave*, but other crops would probably require irrigation.

Evidence of the ravages of locusts was seen throughout the journey, and Mr. Dawe recommends the establishment of a Locust Bureau to control the pest.

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